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EXAMINER	
SHEETS, ELIJAH M	

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2629	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/726,019	RISER ET AL.	
	Examiner	Art Unit	
	ELIJAH M. SHEETS	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25 and 27-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25 and 27-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 December 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. Examiner acknowledges applicant's amendments to the drawings. These amendments are sufficient to overcome the objections from the previous non-final Office action, and the objections to the drawings are hereby withdrawn.

2. Examiner acknowledges applicant's amendments to the specification, and that these amendments overcome previous objections set forth in previous Office action. These objections are hereby withdrawn.

3. Examiner acknowledges applicant's amendments to the claims. Regarding the amendment to claim 27, the amendment overcomes the 35 USC 112 rejection previously presented.

4. Regarding applicant's remarks, further amendments to the claims and the newly added claims, these remarks and claims are treated herein.

Claim Objections

5. Claim 31 is objected to for two minor informalities: in the claim, applicant uses the phrase "having a refractive index that less than of equal to the second refractive index". This should be amended to "having a refractive index that is less than or equal to the second refractive index" or "having a refractive index less than or equal to the second refractive index". Proper correction is required.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in **Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966)**, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows: ***(See MPEP Ch. 2141)***

a. Determining the scope and contents of the prior art;
b. Ascertaining the differences between the prior art and the claims in issue;
c. Resolving the level of ordinary skill in the pertinent art; and
d. Evaluating evidence of secondary considerations for indicating obviousness or nonobviousness.

6. Claims 1, 2, 12, 20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059).

Regarding claim 1, Weissman discloses a helmet mountable display with housing (support structure supported by the head of the user), which includes a cube (viewing portion facing one of the eyes of the user) on which desired image is displayed (cube, Fig. 3) where the spatial light modulator is illuminated by a light source (***one of ordinary skill in the art would have recognized at the time of invention that it would be obvious to use an LED for generating light in the system of Weissman***), and the light source might comprise an optic fiber cable relaying light (fiber optic cable receiving light, transmitting light to reflective display) from a lamp (LED) to lens (Col.2, lines 24-28). In addition, Weissman discloses that the light

source passing through the entry polarizer is directed by the beam splitter onto the liquid crystal device (reflective display) and substantially all of the light reflected from the the liquid crystal device (reflected by the reflective display) is directed by the beam splitter (optics receiving said image projected image to the viewing portion) onto the screen (to project said image, so as to be viewed by the user) (Col. 2, lines 2-5***). In addition, Weissman discloses the light source, (LED, which is not shown, but is obviously attached to the housing through its physical attachment to the optical cable, see Col. 2, lines 20-30), the first plastic optical fiber (Fig. 2) and the reflective display (Fig. 3, FLCD) all being supported in the housing (Figs. 2 and 3).*** Weissman fails to disclose that the lamp (LED) is bonded to first plastic optical fiber. However, Guy discloses a fiber optic LED illuminator, wherein the light guide (***plastic optical fibers being notoriously used as light guides in the art***) may be bonded to light emitting surface of the solid state light source (LED) (Paragraph [0021], lines 14-16). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman and Guy for the benefit of insuring the light guide may be placed in intimate contact with the light emitting surface so that light emitted from the light emitting surface of the solid state light source may be captured by the light guide and is transmitted within the light guide by total internal reflection (Paragraph [0021], lines 8-14). However, neither Weissman nor Guy specifically disclose the use of LEDs as light sources in a heads-up display system. Zavracky, however, teaches an embodiment of a LCD projection system (Fig. 19, item 1300) using color sequencing to produce a full-color image. The system includes three monochromatic LED point or line sources (items 1350, 1352, 1354) which produce red, green and blue light, respectively (Col. 18, lines 29-33). Therefore, viewing all references as a whole,

it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman, Guy, and Zavracky for the obvious benefit of LCD full-color display.

Regarding claim 2, Weissman discloses (in Fig. 3) that the invention may include a helmet attachment, and a rotation point for a visor-type viewing screen (see Fig. 2, dotted lines, which represent the visor-type viewing screen).

Regarding claim 12, Guy teaches that in the coupling assembly the light guide is placed next to the light emitting surface of the solid-state light source and the light guide is bonded to the light source (bonding an end of the associated optical fiber to said surface) (Paragraph [0009], lines 4-6). In addition, Guy teaches that the LED's plastic dome (Fig. 1, item 114) may be drilled (cut) to form a hole (item 116) of proper dimensions to accept light guide (optical fiber) (Paragraph [0023], lines 3 and 4).

Regarding claim 20, Weissman teaches that for "see through" capability, the spherical mirror is a partially reflecting (transparent) mirror and lens (Fig. 1, item 19) is added to provide a "see through" magnification of unity (Col. 2, lines 64-66). Since the image is visible to the user through the mirror's plane, and it is only partially reflecting, the image and the background are visible through the same plane, thus superimposing the image on the background (view therethrough).

Regarding claim 24, Guy teaches that in the coupling assembly the light guide is placed next to the light emitting surface of the solid-state light source and the light guide is bonded to the light source (bonding an end of the associated optical fiber to said surface) (Paragraph

[0009], lines 4-6). In addition, Guy teaches that the LED's plastic dome (Fig. 1, item 114) may be drilled (cut) to form a hole (item 116) of proper dimensions to accept light guide (optical fiber) (Paragraph [0023], lines 3 and 4). In addition, Guy discloses that the LED die (surface) can be cut (configured) to a shape that matches the light guide or fiber bundle (transmits light from the LED more efficiently to the optical fibers bonded thereto) (Paragraph [0022], lines 16-18).

Regarding claim 32, Weissman further teaches the optics receiving the image from the reflective display and project said image directly onto the viewing surface so as to form a final image, said viewing surface reflecting said final image directly to the eye of the user without any intervening structure (Fig. 3). Referencing Figure 3, the final viewing surface is the diagonal surface of the "CUBE", which receives the final image which was formed by the reflexive display, and the diagonal viewing surface reflects the final image directly to the viewer's eye (see eye symbol) without any other intervening structure.

7. Claims 3-11 and 13-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059) and Reynolds (US 3,825,336).

Regarding claims 3 and 4 neither Weissman nor Guy disclose a second or third LED bonded to a second or third plastic optical fiber receiving light from the second or third LED, said first and second (and third) optical fibers having a combined end portion transmitting the light from the first and second (and third) LEDs combined together. Reynolds discloses a

variable color lighting source and mixing device wherein the mixing devices comprise first, second and third incoherent bundles of individual optic fibers, each bundle having an input end and an output end. The input end of each of the three fiber optic bundles is optically coupled to one of the three primary color light sources (LEDs). The output ends of the three bundles are joined together by interweaving the individual optic fibers forming the bundles to form a common composite output (combined output) end of the mixing device (Col 2, lines 25-33). Therefore, viewing all references as a whole, it would have been obvious to one skilled in the art at the time of invention to combine the teachings of Weissman, Guy, Zavracky, and Reynolds for the benefit of utilizing a highly efficient fiber optic light-mixing device for producing a composite color (Col. 2, lines 21-24).

Regarding claim 5 and 6, Zavracky teaches that his system includes three monochromatic LED point or line sources (items 1350, 1352, 1354), which produce red, green and blue light (respective different colors), respectively (Col. 18, lines 29-33).

Regarding claim 7, Reynolds teaches that the mixing devices comprise first, second, and third incoherent bundles (plurality of plastic optical fiber elements) of individual optic fibers, each bundle having an input end (receive light) and an output end (transmit light) (Col. 2, lines 25-27). In addition, Reynolds teaches that the fibers may be made of coated plastic (Col. 6, lines 28-29).

Regarding claim 8, 9, and 10, again, Reynolds teaches that the mixing devices comprise first, second, and third incoherent bundles (plurality of plastic optical fiber elements) of individual optic fibers, each bundle having an input end (receive light) and an output end

(transmit light) (Col. 2, lines 25-27). The composite common output end (combines end portion) of the bundles additively combine (comprises the ends of the optical fiber elements) the different colored lights (first, second, and third LEDs) as they are transmitted from the composite output end (Col. 3, lines 30-33). In addition, Reynolds teaches that the fibers may be made of coated plastic (Col. 6, lines 28-29). Furthermore, Reynolds teaches that the three bundles are incoherent in nature - that is to say that they are formed by a plurality of individual fibers that are interwoven (spatially intermixed) along their length in a random manner to form the bundle (Col. 6, lines 33-37).

Regarding claim 11, Reynolds teaches that the three bundles are incoherent in nature - that is to say that they are formed by a plurality of individual fibers that are interwoven (distributed) along their length in a random manner (randomly) to form the bundle (Col. 6, lines 33-37), and that the output end of the bundles additively combines the different colored lights (combines the light from the LEDs transmitted therefrom) (Col. 3, lines 30-33).

Regarding claims 13-15, Guy teaches that in the coupling assembly the light guide is placed next to the light emitting surface of the solid-state light source and the light guide is bonded to the light source (bonding an end of the associated optical fiber to said surface) (Paragraph [0009], lines 4-6). In addition, Guy teaches that the LED's plastic dome (Fig. 1, item 114) may be drilled (cut) to form a hole (item 116) of proper dimensions to accept light guide (optical fiber) (Paragraph [0023], lines 3 and 4).

8. Claims 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059) and Berman et al. (US 4,859,031).

Regarding claim 16, neither Weissman, Guy, nor Zavracky teach a polarizing structure that is positioned intermediate the optical fiber and the reflective display, said polarizing structure permitting passage of light therethrough having a first polarity and reflecting light of a polarity that is reverse of said first polarity, the light from the optical fiber striking the polarizing structure in instances before and after the light strikes the reflective display, in one instance said light being reflected by the polarizing structure and in the other instance said polarizing structure permitting passage of light therethrough. Berman, however, teaches an optical collimating apparatus for use in a heads-up device, wherein an image is passed through a circular polarizing filter to the semi-reflective concave mirror (polarizing structure), circularly polarizing the image. The semi-reflective concave mirror transmits (permits passage) the image to the cholesteric liquid crystal element (reflective display), which is polarized in a rotary sense opposite (reverse of first polarity) that of the image, causing the image to be reflected without reversal of its rotary sense, back to the concave side of the semi-reflective concave mirror (the light striking the polarizing structure in instances before and after the light strikes the reflective display). The image is then reflected (and its rotary sense reversed) by the semi-reflective concave mirror back toward the cholesteric liquid crystal element, which transmits the image or images to the observer (Col. 2, lines 8-19). Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman, Guy, Zavracky, and Berman for the benefit of providing an image of an object or a

plurality of objects optically superimposed in the line of sight of an observer (Col. 1, lines 62-64).

Regarding claim 17, Berman teaches that the semi-reflective concave mirror transmits (permits passage of some of the light) the image to the cholesteric liquid crystal element (to strike the reflective display), causing the image to be reflected without reversal of its rotary sense, back to the concave side of the semi-reflective concave mirror. The image is then reflected (reflecting said light after it is reflected off the reflective display) by the semi-reflective concave mirror back toward the cholesteric liquid crystal element (Col. 2, lines 8-19).

9. Claims 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059), Reynolds (US 3,825,336), and Berman et al. (US 4,859,031).

Regarding claim 18, neither Weissman, Guy, nor Zavracky teach a polarizing structure that is positioned intermediate the optical fiber and the reflective display, said polarizing structure permitting passage of light therethrough having a first polarity and reflecting light of a polarity that is reverse of said first polarity, the light from the optical fiber striking the polarizing structure in instances before and after the light strikes the reflective display, in one instance said light being reflected by the polarizing structure and in the other instance said polarizing structure permitting passage of light therethrough. Berman, however, teaches an optical collimating apparatus for use in a heads-up device, wherein an image is passed through a circular polarizing filter to the semi-reflective concave mirror (polarizing structure), circularly polarizing the image. The semi-reflective concave mirror transmits (permits passage) the image to the cholesteric

liquid crystal element (reflective display), which is polarized in a rotary sense opposite (reverse of first polarity) that of the image, causing the image to be reflected without reversal of its rotary sense, back to the concave side of the semi-reflective concave mirror (the light striking the polarizing structure in instances before and after the light strikes the reflective display). The image is then reflected (and its rotary sense reversed) by the semi-reflective concave mirror back toward the cholesteric liquid crystal element, which transmits the image or images to the observer (Col. 2, lines 8-19). Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman, Guy, Zavracky, and Berman for the benefit of providing an image of an object or a plurality of objects optically superimposed in the line of sight of an observer (Col. 1, lines 62-64).

Regarding claim 19, Berman teaches that the semi-reflective concave mirror transmits (permits passage of some of the light) the image to the cholesteric liquid crystal element (to strike the reflective display), causing the image to be reflected without reversal of its rotary sense, back to the concave side of the semi-reflective concave mirror. The image is then reflected (reflecting said light after it is reflected off the reflective display) by the semi-reflective concave mirror back toward the cholesteric liquid crystal element (Col. 2, lines 8-19).

10. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059) and Johnson (US 5,719,588).

Regarding claim 21, neither Weissman, Guy, nor Zavracky teach a diffusion screen being placed between the reflective display and optics, which transmit the image to the viewing portion of the device. Johnson, however, discloses that a light-transmitting randomizing or diffusion screen (item 16) may be disposed in front of each LCD screen (item 12), i.e. between the screen (item 12) and the respective optical system (item 14) (Col. 2, lines 35-38). Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman, Guy, Zavracky, and Johnson for the benefit of avoiding disturbing effects on the user's vision, of exposure of the eyes for long periods to entirely pixelated fields of view, and affording a more acceptable viewing impression to the user (Col. 2, lines 32-35).

11. Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059) and Spitzer et al. (US 6,724,354).

Regarding claims 22 and 23, neither Weissman, Guy, nor Zavracky disclose a reflective liquid crystal image field or a reflective active matrix liquid crystal display overlaying a reflective surface. Spritzer, however, discloses a facemask display system, which utilizes a reflective (reflective surface overlaid by) AMLCD (active matrix liquid crystal display, Col 3, line 61). Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention combine the teachings of Weissman, Guy,

Zavracky, and Spritzer for the benefit of offering uniform and efficient illumination, with less weight and volume than prior art systems (Col. 2, lines 41-43).

12. Claims 25 and 27-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weissman et al. (US 5,984,477) in view of Guy (US 2003/0219207 A1), and further in view of Zavracky et al. (US 5,673,059) and Hansen et al. (US 4,170,399, hereinafter referred to as Hansen).

Regarding claim 25, neither Weissman, Guy, nor Zavracky disclose the LED being bonded to the plastic optical fiber by an adhesive having a refractive index that is between that of the LED and the plastic optical fiber. Hansen, however, discloses an LED fiber optic connector, wherein the epoxy used to bond the members together has an index of refraction on the order of 1.50 to 1.55 compared to 1.49 for the fiber and 3.5 for the chip (adhesive having a refractive index that is between that of the LED and the plastic optical fiber) (Col. 4, lines 37-40). Therefore, viewing the references as a whole, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman, Guy, Zavracky, and Hansen for the benefit of providing coupling between the LED and the fiber (Col. 4, line 41).

Regarding claims 27-31, neither Weissman, Guy, nor Zavracky teaches the claim limitations of claims 27-31, though combined, they teach the limitations of claim 1. It would have been obvious to one of ordinary skill in the art at the time of invention, however, to amend the teachings of Weissman and Guy as amended by Zavracky to incorporate the claim limitations of claims 27-31. Specifically, cutting the LED to expose a surface and then

bonding an end of the optical fiber to said surface is well known in the art to be a means of bringing an optical fiber into abutting relationship with the emission edge of an LED, and would have been obvious in view of Hansen (Hansen Col. 3, lines 30-32). In addition, Hansen teaches an adhesive between the end of the first plastic optical fiber and the first LED bonding the first optical fiber to the first LED (Hansen Col. 3, lines 33-34). Additionally, in view of Hansen Col. 4, lines 36-45, it would have been obvious to one of ordinary skill in the art to utilize materials such that:

$$n_{LED} \leq n_{BONDING} \leq n_{FIBER}\text{, or } n_{LED} \geq n_{BONDING} \geq n_{FIBER}$$

(where n is the index of refraction of the material). It is well known in the art that by application of Snell's Law, materials chosen in optical systems have optimal coupling when one of these arrangements are met, as loss of light at material interfaces is minimized. This pertains to the arrangement of claims 27 and 29-31. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teachings of Weissman, Guy, Zavracky, and Hansen for the benefit of high quality light coupling between the LED and fiber (Hansen Col. 4, lines 40-45).

Response to Applicant's Remarks

13. In response to applicant's arguments:

14. Regarding paragraphs 2-4 of the remarks, as the claim 1 rejection above points out above, the references cited teach every limitation of the claim, as well as a compact fiber optic cable

attached to the helmet display. It is reasonable in view of the figures of Weissman that the "FIBRE OPTIC CABLE" package is a compact, single cable (See especially Fig. 3, where the plastic or glass fiber, cladding and cover are all individually drawn at the end of the cable). Other than no cable at all, there is therefore no way to reduce the volume of the fiber optics package or allowable radius of curvature.

15. Regarding paragraph 5 of the remarks, although no mention of an LED is made, it is well known in the art that LEDs serve as light sources for a wide variety of display systems, and it would be reasonable and obvious to use an LED as the light source in Weissman, and is obviously attached to the housing through its physical attachment to the optical cable, see Col. 2, lines 20-30. In addition, Zavracky teaches the use of an LED as a light source in a helmet-mounted display system.

16. Regarding paragraph 6, although Guy does not teach using plastic optical fibers, the use of plastic optical fibers is obvious and well-known in the art as an alternative to glass. In addition, although Guy does not suggest or teach its use in a helmet mounted display, its combination with the helmet display of Weissman would have been obvious and reasonable for the reasons stated above.

17. Regarding paragraph 7, 12 and 13, applicant asserts that the teachings of Guy would melt a plastic optical fiber if implemented in current invention. However, there is no evidence of this in the current specification, and the current invention discloses such a structure. Even if this is assumed to be true, examiner calls attention to Hansen, which clearly teaches the use of a bonding agent between the LED and the optical fiber. The further disclosed features of Hansen

can be seen above in rejection statements concerning the cited claims 25 and 27-31 above. Therefore, this point is moot.

18. Regarding paragraph 8, applicant agrees that Zavracky teaches the use of LEDs as light sources in a helmet mounted display, but states that Zavracky fails to teach the use of plastic optical fibers as a light guide bonded to the LED. However, in view of Guy, this bonding would have been reasonable and obvious to one of ordinary skill in the art at the time of invention. Therefore, this point is moot.

Conclusion

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eli Sheets whose telephone number is (571) 272-6532. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vu Le can be reached on (571) 272-7332. Customer Service can be reached at (571) 272-2600. The fax number for the organization where this application or proceeding is assigned is (571) 273-7332.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Elijah Sheets/